Response to Intervention: Does it Improve Literacy Skills for At-Risk Students?

Submitted in Partial Fulfillment
of the Requirements for
EDUC 5263 Educational Research I

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October 2, 2016

ABSTRACT

Response to Intervention (RTI) has been used in the public school system to improve student achievement in areas of weakness and identify students who may need further resources. The local goal is to improve the retention rate and identify those students that may need additional support systems. The overall goal is to decrease the number of children in special education by offering interventions at each of the three tiers. There is little research on RTI in the Pre-Kindergarten environment. This study was conducted using thirty-eight four-year-old Kindergarten students at Pickens Elementary School in Pickens, SC. These students qualify for the program based on a pre-screening assessment and parent survey. The most at-risk students are accepted first, and the program is considered an intervention for these students. There were some students who attended this program that were still receiving RTI and being retained in Kindergarten, so the researcher conducted a study to see if RTI would be successful in the four-year-old Kindergarten program. The researcher used the quantitative research process to determine if RTI improved student's achievement in the area of literacy, specifically the areas of letter and letter sound identification. The measuring instrument was the Phonological Awareness Literacy Screening (PALS) assessment. Student's scores were compared before and after tier two of the RTI model. The researcher concluded that out of twenty-four possible growth targets, sixteen were met or exceeded. That means that sixty-seven percent of growth targets were reached or exceeded after tier two of the RTI model. Therefore, the research indicated an increase in student achievement after Response to Intervention in a four-year-old Kindergarten classroom.

TABLE OF CONTENTS

Chapter 1

Statement of the Problem

Response to Intervention (RTI) has taken the school world by storm. Many school

districts are latching on to this system in hopes that fewer students are placed in special

education. Another important reason, for implementation of this system, is the failure rate of

students. Many students are not reaching their target reading levels and therefore being retained

to "catch-up" with their peers. Not only are districts taking a special interest in this particular

area, but they are supplying early childhood educators with the necessary resources and

professional development needed to implement these intervention programs. Early childhood is

such a critical point in a child's life and development. Children absorb so much between the ages

of three to six, yet many school districts are waiting for these children to reach Kindergarten

before the interventions begin. The School District of Pickens County has four-year-old

Kindergarten programs in every school. These programs are designed to reach the most at-risk

children in Pickens County. Children attending four-year-old Kindergarten are not to be referred

for special services outside of speech and occupational therapy. Four-year-old Kindergarten (4K)

is designed to give these children a chance to get a good start to school, and therefore it has been

labeled an intervention program in and of itself. However, the interventions do not begin at this

point. The children receive regular instruction, but RTI is not used to help the children who are

performing below average for their age. The purpose of RTI is to intervene early, so why are

educators not intervening earlier? Why is the number of students being retained increasing? No

4K program in Pickens County has attempted to try RTI to help their at-risk students, so this

research is much needed. Teachers need to assess the developmental areas of literacy for age's

four to five and target these students for RTI. Once these at-risk students have been identified,

teachers can continue their regular instruction, and they can begin to implement Tier 2 for the lowest achievers. Will research prove that RTI is effective for improving the literacy skills of at-risk students enrolled in the 4K programs?

Significance of the Study

Four-year-old Kindergarten is much different from other grade levels because it is not a requirement, and a screening is required for every child before they can be accepted into the programs. The child must have a certain score, on the Dial 4 assessment, in order to attend 4K. Since 4K is not mandatory, parents are required to complete a very personal survey at the beginning of the year. This survey includes questions that allow teachers to determine if the child is considered "At-risk". The survey includes questions that cover topics from parent education, family history, family income, family status, and government assistance. Each of these questions, on the survey, adds points to the child's overall score. Acceptance is granted to students based on the Dial 4 assessment score and the survey scores added together. The Dial 4 is given again, at the end of the year, to track each student's progress in the development areas of motor, concept, and language development. This year, 4K has an additional assessment, which will be given three times this year. The PALS assessment is used to track student progress in the area of literacy only. This assessment is given at the beginning of the year, so that we can intervene early for students that are not where they should be. The students that score poorly, on the middle of the year assessment, will be placed in a group that will receive Response to Intervention. A variety of research based interventions will be used, to hopefully improve the literacy scores, of the 4K students, at Pickens Elementary School. The interventions will be used, with this target group of students, for ten minutes every day during small group instruction. Progress will be tracked, and data will be gathered during the time of Tier 2, in the Response to

Intervention model. Using this data gathered from small groups and the PALS literacy

assessment, I will determine if RTI improves the child's literacy skills for these at-risk students.

Justification for the Study

The problem, that is evident, is that many children labeled at-risk tend to fall behind their

same age peers, in the area of literacy. Many of the survey questions, which I mentioned above,

effect student's literacy development. Kindergarten teachers have voiced their concerns for their

at-risk students, even the ones that attended four-year-old Kindergarten. They use RTI to help

those children. Many times, those children still have to be retained because they were not

meeting necessary benchmarks on MAP. Kindergarten standards have changed dramatically over

the last twenty years. They are much more demanding now, and the number of children being

retained in Kindergarten has increased. Since RTI has not been tried at the pre-kindergarten

level, research needs to be done in this area. If that research proves RTI to be successful, by

increasing the at-risk student's literacy scores, fewer students would be retained in Kindergarten,

and more students would enter Kindergarten with the literacy skills that will help them be

successful. This would have an incredible effect especially if every four-year-old Kindergarten

class started using RTI. There are twelve schools with two half day classes. Each class has a

maximum number of twenty children which means there are forty possible children being

serviced per school. There are four schools that have only a half day program and can therefore

service twenty children. This means that possibly five hundred and sixty students could receive

RTI. The five hundred and sixty students that are enrolled in four-year-old Kindergarten

programs are the most at-risk students in Pickens County. Pending research on the effectiveness

of RTI in 4K, more students in Pickens County could avoid retention in Kindergarten, and enter

Kindergarten on target for literacy skills.

Hypothesis and Research Questions

The researcher hypothesizes that the students, which are identified as at-risk, will reach their growth target after receiving RTI.

Research Questions:

1. How many students will be identified as at-risk after the PALS middle of the year assessment?

2. What interventions will be used in Tier 1, Tier 2, and Tier 3?

3. What type of assessment will be used to track weekly progress in Tier2 and Tier 3?

4. What growth will they show in the area of uppercase letter recognition on the PALS assessment?

5. What growth will they show in the area of lowercase letter recognition on the PALS assessment?

6. What growth will they show in the area of letter sounds on the PALS assessment?

7. What intervention will be used at Tier 2?

8. What interventions will be used at Tier 3 if Tier 2 is unsuccessful?

9. What growth will occur after those students receive Tier 1 and Tier 2 of RTI?

10. Will those students meet their growth target for uppercase letters after RTI?

11. Will those students meet their growth target for lowercase letters after RTI?

12. Will those students meet their growth target for letter sounds after RTI?

13. How will the researcher determine if RTI was effective?

Chapter 2

Review of Literature

Response to Intervention has been implemented in elementary schools for many years now. However, only recently has the Response to Intervention (RTI) model been used in a pre-school setting (Carta, 2014). There are many factors that contribute to the effectiveness of RTI in the pre-school setting. The teachers implementing this model, in their classroom, must have a knowledge base of RTI. They must know the reasons for this model, and how it will benefit students. They must have professional development or conduct necessary research, and they must have a universal screening program already in place. It's important to know the possible benefits and challenges of RTI in a pre-school setting, and teachers must understand that it takes a team effort to implement the model successfully. Teachers need to complete research to examine the effectiveness, of RTI, in other pre-school settings. If they indeed find research to prove the effectiveness in pre-school, then they need to implement effective intervention strategies for each Tier of the model. Every intervention used should be research based or evidence based (Hoover, 2011). The RTI model will be defined and an explanation of how the model came into place will be provided. The reasons and the benefits of implementing RTI will be discussed, and the researcher will explain how the RTI model requires a team approach in a pre-school setting. Lastly, the researcher will provide examples of research-based interventions, for each tier, used in other pre-school settings.

Response to Intervention is a three tiered instructional framework that schools can implement to provide early intervention for struggling learners (Hughes, 2011). The three types of instruction include core instruction, supplemental instruction, and intensive instruction (Hoover, 2011). Response to Intervention is most commonly used as a reading intervention.

There are three tiers in the RTI model and each one works to improve students reading development and help them meet grade level expectations.
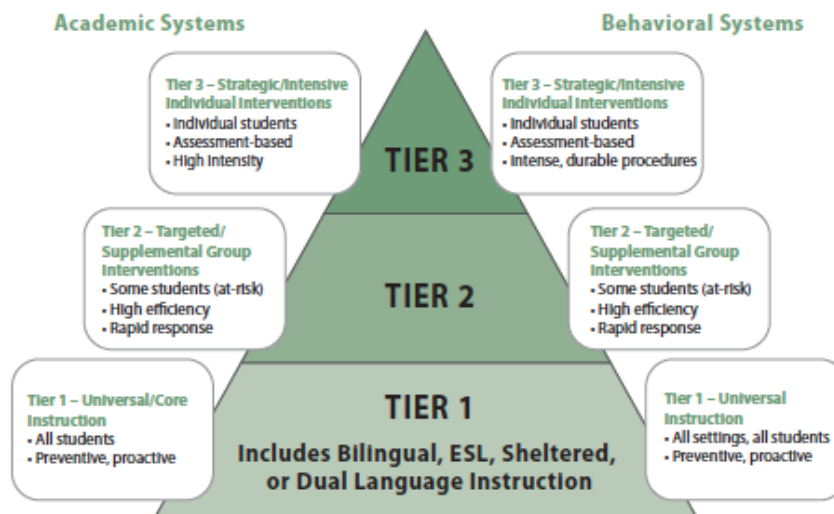

Figure 2. *Adapted from: OSEP Center of Positive Behavioral Interventions & Supports*

Tier one includes evidence-based instruction of the core curriculum. During this tier, students are given a universal screening. Universal screening is the first step in identifying students as at-risk. "The majority of RTI models for preventing and identifying children with RD (Reading Disabilities) begin with a universal screening device" (Davis, 2007, p.33). The screening is usually given three times a year. The first administration, of the assessment, takes place in the fall, the second takes place in the winter, and the last assessment is given in the spring. These assessments usually focus on certain target skills. Phonological Awareness and Literacy Screening (PALS) is the universal screening mechanism used by the researcher in this study. The PALS pre-school assessment targets the following areas: phonological awareness, letter recognition, onset rimes, beginning sounds, nursery rhyme awareness, print awareness, and name writing. The PALS screening mechanism allow teachers to benchmark their students. This allows teachers to make individual goals for their students, and it helps to guide instruction.

Monthly progress monitoring is often used with at-risk students in this tier (Justice, 2006). Tier 2, of the RTI model, includes the supplemental instruction when students are not meeting necessary benchmarks from Tier 1 instruction (Hoover, 2011). Tier 2 usually consists of 2-3 small groups of students that are considered high risk. At-risk students receive the supplemental instruction for 60-90 minutes per week (Justice, 2006). Tier 2 requires teachers to use more frequent progress monitoring to track student's growth in the targeted at-risk areas (Hughes, 2011). It could be monthly. Ideally, it will take place every one to two weeks (Hughes, 2011). Tier 3, of the RTI model, happens when students are not making necessary gains in Tier 2. Students receive intensive instruction, in Tier three, and they are often identified for special education services.

Response to Intervention began after the reauthorization of the Individuals with Disabilities Education Act (IDEA), in 2004 (Hoover, 2011). The IDEA allowed for schools to transition from the previous form of special education referral to this new Response to Intervention model (Hoover, 2011). Previously, the "IQ-achievement discrepancy" model was used to identify a learning disability. Now, up to fifteen percent of federal funding, that was being used for special education only, is going towards the early intervention programs like RTI (Ball, 2011). In a national survey, completed in 2009, it was found that forty-seven out of fifty states nationwide had adopted some form of the RTI model, and over seventy percent of school districts have implemented RTI (Hughes, 2011).

Response to Intervention came into place because there was a need for change. "As research in previous decades has shown, in the absence of high-quality preventative interventions, poor readers tend to stay poor readers" (Justice, 2006). The change was needed, and now many benefits can be seen from it. In a recent study, it was discovered that there was a

twelve percent decline in the need for special education services for pre-school students that received RTI (Greenwood, 2011). Another study found improvement on academic achievement, with the implementation of the RTI model (Hughes, 2011). The early literacy intervention gives pre-school students the opportunity to catch-up with their peers before starting their Kindergarten year, and it prevents the need for special education services.

While research has shown that RTI, in a pre-school setting, is beneficial, difficulties may arise. Many state pre-school programs are geared to reach at-risk students in the community by offering free, public education prior to Kindergarten. Since the RTI model is geared to target those students, the possibility of larger numbers does affect the program's success (Ball, 2011). Typically, only twenty percent of students should be identified as needing RTI (Carta, 2014). These at-risk pre-school programs already screen and detect at-risk students prior to acceptance in the program. If there are more children identified as needing Tier 2 or Tier 3 instruction, more staff and materials would be needed (Carta, 2014). An even greater need would be time (Carta, 2014). Most state funded pre-school programs operate on a half day schedule. This takes instructional time down to three hours per class. Fortunately, these programs also require certain teacher to student ratios. Most state funded pre-school programs have a1-10 teacher to student ratio. That ratio is two-thirds of a Kindergarten class's ratio. This better enables the teachers to meet with multiple groups, if the problem should arise.

Successfully implementing RTI, in a pre-school setting, requires a team effort. The RTI team may include the pre-school teachers, school administrators, special service educators or therapist, the school psychologist, and the child's family members (Bayat, 2010). Teachers or other team members must have the time to set up activities, monitor data, and engage the child in the intervention activities (Kaiser, 2014). The need for speech therapy is commonly associated

with poor language and literacy skills (Greenwood, 2014). "Research indicates that phonological awareness skills and emergent print knowledge are the strongest early predictors of word reading development" (Davis, 2007, p34) Phonological awareness is the ability to detect and manipulate the sound structure of words (Kruse, 2015). Therefore, the school's speech therapist will likely be part of the RTI team in a pre-school setting. School administrators help aid in support by allowing the teachers to partake in professional development, and by providing financial needs for any additional materials, that may be needed. The child's family members are a key factor in the success of RTI (Bayat, 2010). Family members will need to attend conferences, with their child's teacher, so the teachers can share progress, goals, and strategies with the family.

There is a need for the multi-tiered intervention model known as RTI. Scientific literature shows that most of the reading difficulties that children have, could be prevented if early intervention took place (Justice, 2006). Various types of research based interventions can be used at each tier, in the RTI model. "Curricula that are geared toward Tier 1 of the RTI-EC models should be composed of broad concepts, skills, and developmental milestones that are set as standards for all children" (Buysse, 2013, p438). Some examples of these tier one curricula include: High Scope curriculum and Creative Curriculum. Some districts may opt for curricula that focus on specific domains like literacy. Literacy Express is one example of this type of curriculum (Buysse 438). The School District of Pickens County uses the Zoo Phonics curriculum that focuses solely on the literacy domain. Therefore, the researcher will use this program for tier one instruction during their study. Class wide interventions, which were implemented in a Head Start program, included the adoption of a comprehensive curriculum, activity enrichment, and behavior management activities (Barnett, 2007). Feedback was also given to the teachers, by members of the program's RTI team concerning the intentional instruction they were providing to students.

Some of that instruction included: Increasing opportunities to respond, interactive reading, choral responding, modeling, wait time, and pacing (Barnett, 2007). Tier two interventions include teacher lead activities in a small group setting. The activities or interventions should reinforce the curriculum taught during tier one instruction (Buysse, 2013). Milieu language interventions were used at Head Start programs, during small group, tier two instruction (Barnett, 2007). "Some school districts determine interventions at Tier 2 through problem-solving teams that develop specific interventions based on individual student needs. Other districts predetermine a list of research-based interventions that target specific skill deficits and try to maximize efficiency of resources by grouping students who have similar academic needs" (Collier, 2010, p69). Tier three, of the RTI model, really has two main purposes. One purpose is the prevention of special education services. The other purpose is to help determine eligibility for special education services (Collier, 2010). "Using research-based scaffolding strategies such as response prompting, modeling, peer supports, and corrective feedback is another Tier 3 approach that has been conceptualized within the early childhood RTI model" (Buysse, 2013, p441). This allows teachers the ability to provide their students with more intense, individualized instruction.

"The application of RTI to pre-school classrooms is both logical, given the focus on prevention and early intervention, and practical, given the focus on progress monitoring and quality learning environments" (Kruse, 2015, p190). While there are some limitations, to the Response to Intervention model in a pre-school setting, the majority of the scientific literature suggested that RTI in the pre-school setting was beneficial. Not only did RTI, in the pre-school setting, help to improve at-risk student's overall literacy development, but it also provided data to identify the students that may require special education services. The RTI model holds teachers accountable for providing research based instruction, and it encourages a team effort on

behalf of school staff. Therefore, when implemented correctly, the Response to Intervention

model has its place in the pre-school classroom.

Chapter 3

Methodology

Research Purpose

Response to Intervention (RTI) has taken the school world by storm. Many school

districts are latching on to this system in hopes that fewer students are placed in special

education. Another important reason, for implementation of this system, is the failure rate of

students. Many students are not reaching their target reading levels and therefore being retained

to "catch-up" with their peers. Not only are districts taking a special interest in this particular

area, but they are supplying early childhood educators with the necessary resources and

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of three to six, yet many school districts are waiting for these children to reach Kindergarten

before the interventions begin. The School District of Pickens County has four-year-old

Kindergarten programs in every school. These programs are designed to reach the most at-risk

children in Pickens County. Children attending four-year-old Kindergarten are not to be referred

for special services outside of speech and occupational therapy. Four-year-old Kindergarten (4K)

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point. The children receive regular instruction, but RTI is not used to help the children who are

performing below average for their age. The purpose of RTI is to intervene early, so why are

educators not intervening earlier? Why is the number of students being retained increasing? No

four-year-old Kindergarten program in Pickens County has attempted to try RTI to help their at-

risk students, so this research is much needed. Teachers need to assess the developmental areas of literacy for age's four to five and target these students for RTI. Once these at-risk students have been identified, teachers can continue their regular instruction, and they can begin to implement Tier 2 for the lowest achievers. Will research prove that RTI is effective for improving the literacy skills of at-risk students enrolled in the 4K programs?

Research Participants

The participants, in this study, will include the 4K students at Pickens Elementary School (PES). There are two half day four-year-old Kindergarten programs at PES. The morning class has nineteen students, and the afternoon class has nineteen students. The total number of students involved in this study is thirty-eight.

Four Year Old Kindergarten Class: Research Participants at Pickens Elementary School		
Factor *(e.g., gender, ethnicity, SES, Special Education Services, DSS services, Parent Education, Family Status, Medical Conditions)*	**Description** *(in terms of your students)*	**Source(s)**
Gender	20 boys 18 girls	Observation
Ethnicity	32 Caucasian 3 Caucasian & A.A. 2 African American (A.A.) 1 Latino	Power School
Socio-economics	17 Free lunch 6 Reduced lunch 15 Pay in full	Cafeteria Supervisor

Special Education Services	3 Smart Start Program 7 Outside OT Therapy 7 Speech Therapy	Student IEPs and Documentation supplied by the parent
DSS Services	22 Receive Services 16 Do Not Receive Services	Dial 4 Student Selection Criteria
Parent Education	30 High School Ed. Or Higher 8 Less Than High School Ed.	Dial 4 Student Selection Criteria
Family Status	25 Both Parents 11 Single Parent 1 Grandparent 1 Other Family Member	Dial 4 Student Selection Criteria
Medical Conditions	1 Autistic 2 Developmental Delay 2 Asthma and Seizure	Student IEP's and Documentation supplied by the Parent

Research Instruments and Data Collection

At the beginning of the year, every student will receive the universal screening mechanism (PALS Literacy Assessment), and the students will be placed in homogeneous groups based on ability. Since the four-year-old Kindergarten programs in Pickens County are in place to intervene for at-risk students anyway, the teacher/researcher already uses the Zoo Phonics Literacy curriculum. This curriculum is research based and mandated by the district. Therefore, every student will receive Tier 1 instruction. Students that do not show necessary progress, on the middle of the year PALS literacy assessment, will be identified and those students will move to Tier 2, of the RTI model. That group of students will not be identified until the PALS assessment is given again in January. So, the number of students, that will be assessed bi-weekly using progress monitoring, is still unknown at this point in the study. Tier 2

interventions will take place in a small group setting of no more than three students, and the duration will last between 8-10 weeks. My Sidewalks is the research based, Tier 2 intervention program used by Pickens Elementary Kindergarten teachers, and it is likely that the researcher will use this program as well. If certain students are still not showing necessary progress in Tier 2, then the researcher may call upon her team members to supply Tier 3 interventions that require more individual instruction. Data would still be collected through progress monitoring. If students are still not making necessary growth, special education services may be examined.

Description of Research Methods

Quantitative research will be used in this research design because the focus is on numerical data. This design is very structured in that the dependent variable is the performance from week to week during the progress monitoring in Tier 2 and the performance on the PALS literacy assessment that is given three times a year. The independent variable will be the students identified as at-risk. The controlled variables are the RTI interventions that are set in place for each Tier of the model. The researcher is depending on statistical precision to test the hypothesis.

Limitations and Assumptions

The assumption will be made that the research participants will be present during Tier 2 of the RTI model. This timeline is between 8-10 weeks and progress monitoring will take place bi-weekly. Limitations are very limited in this study. The only limitations that may occur are if students need to be moved to Tier 3 of the RTI model and require individual instruction. The researcher will then have to call upon the school's RTI team to help supplement instruction.

Chapter 4

RESULTS

Response to Intervention (RTI) is a three tiered model that aims to provide additional instruction and support for students identified as at-risk. RTI has been used to improve math, English, and in some cases behavioral issues. The first tier in this model includes quality, research based instruction that is given to all students. After a state assessment is given, students are then identified as being at-risk. That simply means that if these students are at-risk for being retained or may have the need for special education services. Once these students are identified, they move into the second tier of the RTI model which is supplemental instruction that takes place in a small group setting. The supplemental instruction program is usually designated by the school district. Last year, Pickens Elementary used the My Sidewalks program as the Kindergarten reading intervention, so the first portion of this intervention program was used in this study as the Pre-Kindergarten reading intervention. The third tier, of the RTI model, is designed for those students who go through the second tier and still show little to no growth. This is typically no more than three percent of the total class population.

Response to Intervention (RTI) has been used for years in grades Kindergarten through fifth grade. Unfortunately, little research has been conducted at the Pre-Kindergarten level, yet children absorb so much between the ages three to six. There are many important things that pre-school aged children are learning, and some of those things include pre-reading skills. The four-year-old Kindergarten programs throughout Pickens County, are designed to be an intervention for students who are already identified

as at risk. This study was necessary to test and find whether or not Response to Intervention would help improve the pre-literacy skills for Pre-school-aged children.

In this study, the total number of students was thirty-six. When parents of those students registered their child for the program, they completed a selection criteria form that includes a list of factors that may apply to the child or household. The parents are required to complete this form, but they may choose to omit certain information. The researcher encouraged parents to complete the form honestly because each factor goes into the child's total score. It's the Dial 4 score and this criterion score that determine the acceptance of the student into the four-year-old Kindergarten program. Some of the factors on the criteria include; DSS services, free/reduced lunch, incarceration of parent, English as a second language, family status, frequent relocation, IEP, parent's education status, and social skills observed during the Dial 4 screening. A low score on the Dial 4 assessment piece provides the teacher with a better understanding of the student's background knowledge. The screening results are not included in this study because the assessment is given prior to acceptance in the program. The assessment is mentioned because it provides the reader with a better understanding of the entire class population. In addition to the Dial 4 screening taking place prior to acceptance, the state mandated a new assessment, Phonological Awareness Literacy Screening (PALS), to take place within the first forty-five days of school and the last forty-five days of school. The option is also given for teachers to give the assessment again in a winter window. The researcher used the scores from the fall PALS assessment as a benchmark. The fall portions of the assessment include seven different areas of literacy including name writing, alphabet recognition, letter sounds, beginning sound awareness, print and word awareness, rhyme

awareness, and nursery rhyme awareness. Because the December report card, for four-year-old Kindergarten, does not require students to have mastered all of these skills in completion, the teacher waited until the PALS winter assessment to target those students who need supplemental instruction. The PALS winter assessment was given on January twenty-sixth. The winter assessment only covers uppercase letter recognition, lowercase letter recognition, and letter sounds. The assessment actually provides a range for expected scores, and it identified those students who feel below the expected range. Those students that fell below the expected range were the students that were identified as being more at-risk for falling behind in the area of literacy development. Therefore, these were the students in which the researcher moved into the second tier of the RTI model. These students received twelve weeks of small group, supplemental instruction using the first portion of the My Sidewalks program. This portion includes learning letter names, letter sounds, and identifying first and last sounds. Alphabet knowledge is at the very foundation of pre-literacy skills needed to become successful readers. Without these basic skills, a person cannot learn to read. The following charts show the entire student population score results. It was from these results that the researcher determined which students would move into Tier two of the RTI model.

Pre-Assessment Charts

Uppercase Letter Recognition Winter Assessment
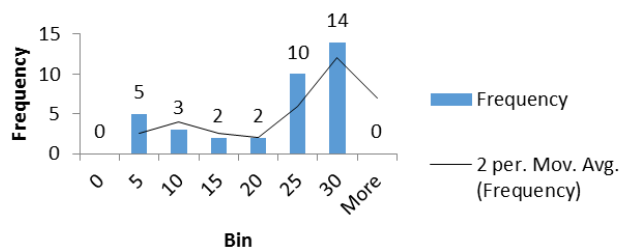
| Mean 19.38 | Median 24.5 | Mode 26 |
| Variance 78.29 | Standard Dev. 8.85 | N 36 |

Uppercase Letter Recognition Winter Assessment
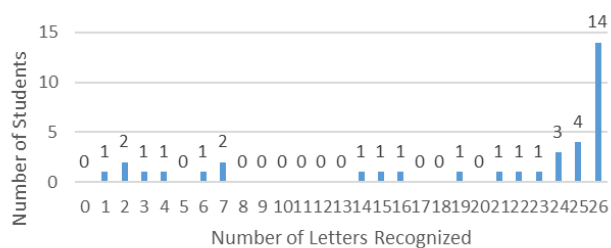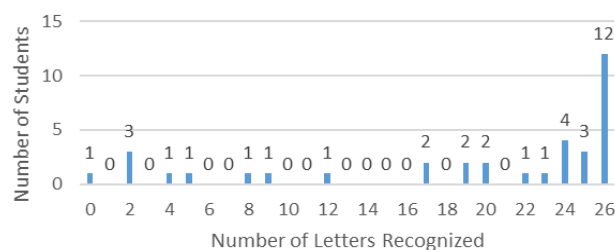

Lowercase Letter Recognition Winter Assessment
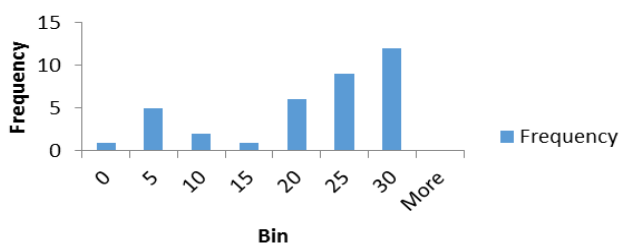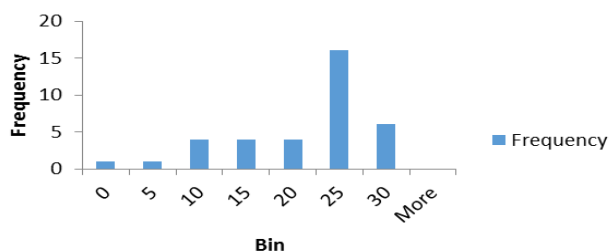
| Mean 19 | Median 24 | Mode 26 |
| Variance 76.39 | Standard Dev.8.74 | N 36 |

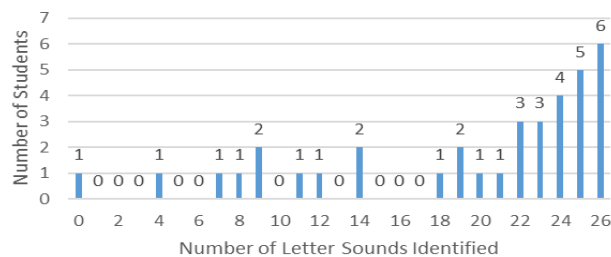Lowercase Letter Recognition Winter Assessment

Letter Sounds Winter Assessment

| Mean 19.36 | Median 22.5 | Mode 26 |
| Variance 51.79 | Standard Dev. 7.2 | N 36 |

Letter Sounds Winter Assessment

The tier two small group instruction took place over a period of twelve weeks with fifty minutes of supplemental instruction per week. The suggest amount of time is between sixty to ninety minutes, but the time was adjusted based on the school day. The four-year-old Kindergarten programs in Pickens County are only half day, so fifty minutes was the maximum amount of time that the teacher could meet with that small group. The time was also adjusted to meet the developmental needs of four year olds. Their maximum attention span is only ten minutes, therefore adding additional time to the group meetings would have only added frustration and behavior issues. At a minimum, teachers are required to progress monitor once a month, but it is suggested to monitor bi-monthly. The researcher gave a quick assessment as the progress monitoring tool. Then, the researcher sent home a progress report to keep parents informed of their child's progress along the way.

Changes in the methodology took place because two children in the original population moved before the winter assessment date. That move the population from thirty-eight to thirty-six. The teacher/researcher used the same research based curriculum for tier one instruction that was provided by the district. The program used in Pickens County is the Zoo Phonics literacy curriculum. The number of students identified, after the PALS screening took place in January, was eight. Typically, the number of students receiving RTI should not exceed twelve percent of the total student population, but in this study, that number was twenty-two percent of the total population. However, the entire population includes two half day classes. Therefore, that percentage is cut in half which then shows eleven percent per classroom which is much more manageable. The duration of RTI is typically eight to ten weeks but in this study it was extended to twelve weeks

since the time each week was ten minutes short of the expected time of sixty-ninety minutes. Also, the PALS spring assessment window didn't open again until the end of the twelve weeks.

Research questions were reviewed and revised based on changes that took place within the PALS winter assessment. The researcher learned that the Winter assessment could only be given over the sections labeled *Alphabet Knowledge.* Therefore, some questions addressing other portions of the assessment were omitted. The alphabet knowledge portion of the PALS assessment included uppercase letter recognition, lowercase letter recognition, and letter sounds. Thirty-six students were assessed in the winter, and eight were identified for tier two instruction. The intervention used at tier one is the Zoo Phonics literacy curriculum along with other research based instruction. The My Sidewalks literacy intervention curriculum was used during tier two small group, supplemental instruction. Tier three included more individualized instruction given by the classroom teacher. This included scaffolding strategies, response prompting, additional modeling, peer support, corrective feedback, and data given to the Kindergarten teachers so they could begin the screening process for special education services like speech and resource. The researcher will determine the growth for each student by comparing each students winter PALS assessment and the spring PALS assessment. The growth target was already defined on the PALS assessment. For uppercase letter recognition, the target was twelve to twenty-one letters correctly identified. For lowercase letter recognition, the target was nine to seventeen letters correctly identified. For letter sounds, the target was four to eight sounds correctly identified. The researcher will read the following results to draw conclusions about the effectiveness of RTI in this study.

Post-Assessment Charts

Uppercase Letter Recognition Spring Assessment
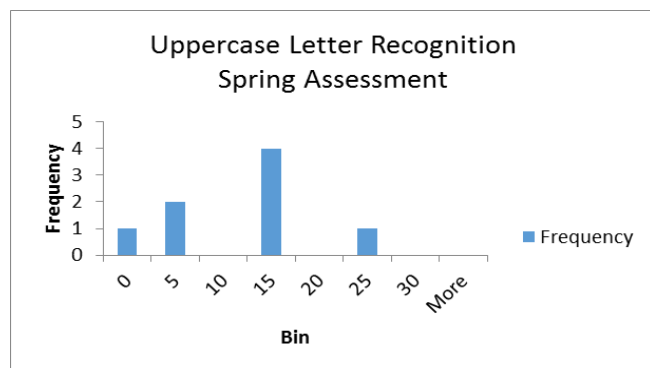
Mean 10.13   Median 11   Mode 11

Variance 45.11 Standard Dev.6.72   N 8

Lowercase Letter Recognition Spring Assessment
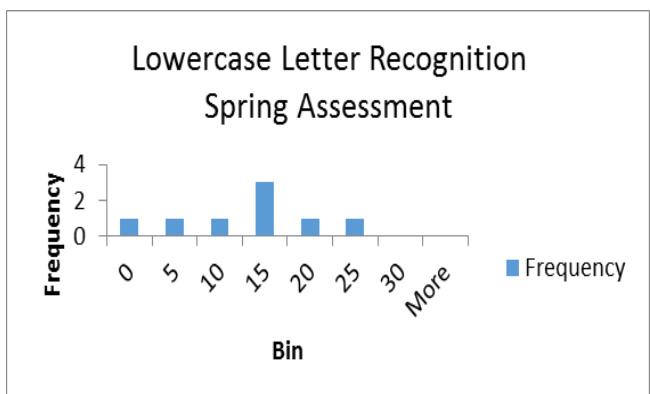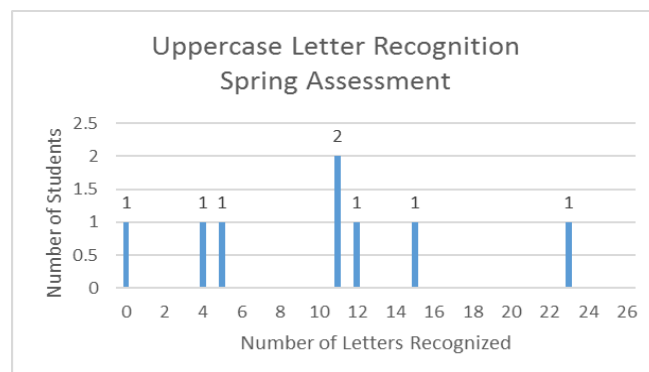
Mean 10.62   Median 11.5   Mode 12

Variance 42.48 Standard Dev. 6.52   N 8

Letter Sounds Spring Assessment
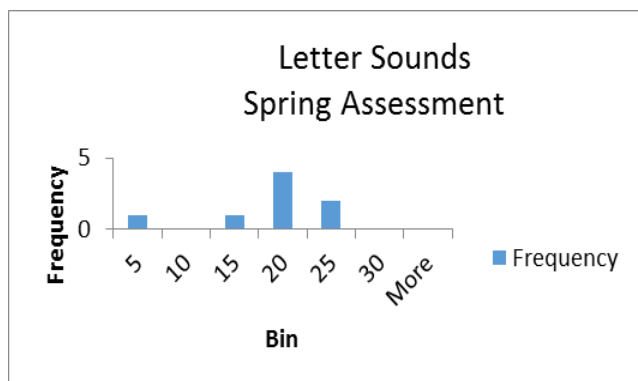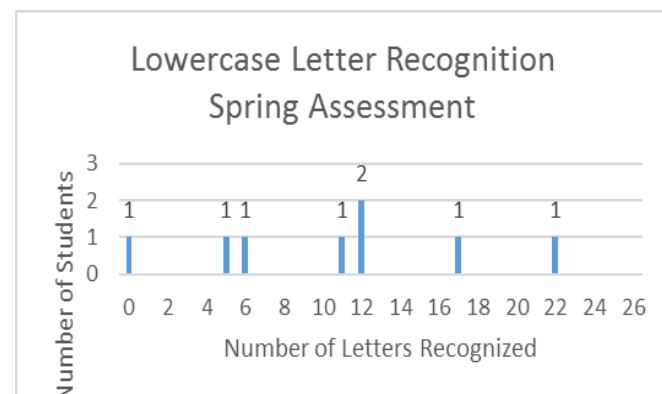
Mean 16. 62   Median 17   Mode 17

Variance 29.48 Standard Dev. 5.43   N 8
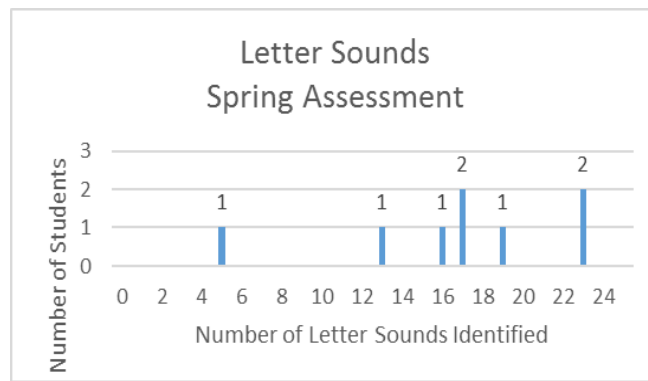
Findings

The researcher created a histogram for each section of the PALS literacy assessment. The entire class population was used in all three of the winter assessments because this was the assessment used to identify those students who were not on target. Therefore, the winter assessment population was thirty-six, and the spring assessment population was eight because eight students scored below the developmental range in at least one or more of the three areas. Each of the histograms from the winter assessments is screwed to the right. This is because the majority of the class scored above the developmental range in all three areas. The researcher also chose to create a column chart for each portion of the assessment in order to show the exact number of students that mastered the letters and sounds. The histograms from the spring assessment had a normal bell curve shape with a couple of outliers on either side of the mean.

Chapter 5

DISSCUSSION

Summary

The purpose of this study was to determine if Response to Intervention would help improve the pre-literacy skills for Pre-school-aged children identified as at-risk. The students were identified using the Phonological Awareness Literacy Screening (PALS) assessment. This state mandated assessment is only required to be given two times during the school year. However, teachers are permitted to give the assessment a third time during a winter window to further track their student's progress in the area of *Alphabet Knowledge*. The researcher took advantage of this opportunity to identify those students who were not on track to meet the spring growth target. After reviewing the results from the winter assessment, the researcher determined that eight students were not on track to meet the spring growth target. These students scored below the growth target in one or more areas of alphabet knowledge. These students were then placed into a small group to receive the second tier intervention program, *My Sidewalks*.

Conclusions and Implications

The PALS spring assessment was given during the last forty-five days of school, and after reviewing the results the researcher concluded that Response to Intervention was successful in helping most students meet the spring growth target in one or more area. The researcher compared the winter scores to the spring scores for each section of *Alphabet Knowledge.* For uppercase letter recognition, eight students had not met the expected growth target in the winter. In the spring, two students met the goal of twelve to twenty-one letters recognized, and one student exceeded that goal by recognizing twenty-three uppercase letters. Two students were one

point from reaching the growth target with a score of eleven uppercase letters recognized. Two students showed growth, but did not meet the growth target with scores of four and six uppercase letters recognized. One student showed no growth at all. For lowercase letter recognition winter assessment, the same eight students did not meet the growth target of nine to seventeen lowercase letters recognized. In the spring, one child exceeded the goal with a score of twenty-two letters recognized, and four students met the growth target for lowercase letters recognized. Two students showed some growth, but did not meet the growth target, and one student showed no growth at all. On the winter assessment, only two of the eight students identified did not meet the growth target of four to eight sounds identified. In the spring, both of those students met the growth target, and the other six that were within range actually exceeded the growth target by identifying thirteen or more letter sounds correctly.

Based on these findings, three students did not meet the spring growth target for uppercase and lowercase letter recognition, but all met or exceeded the growth target for letter sound identification. The researcher concluded that the tier two intervention, *My Sidewalks* helped to improve all students letter sound recognition, and helped five out of eight reach their goal for lowercase letters recognized. Unfortunately, only three out of eight students met the growth target for uppercase letter recognition. The mean for uppercase letters recognized was actually two points below the growth target minimum of twelve letters recognized. The mean for lowercase letters recognized was above the growth target of nine, and the mean for letter sounds identified was exactly double the maximum growth target of eight sounds identified. The researcher concluded that out of twenty-four possible growth targets, sixteen were met or exceeded. That means that thirty-three percent of growth targets were not met. Sixty-seven percent of growth targets were reached after tier two of the RTI model. While the ultimate goal

was one hundred percent of the growth targets being met, the percentage of met targets was well above that of targets not reached. Therefore, the research indicated an increase in student achievement after Response to Intervention in a four-year-old Kindergarten classroom.

Recommendations

Based on the findings from this study, the following recommendations for further research are made:

1. This study should include effects of RTI in other four-year-old Kindergarten classes.

2. This study should include effects of RTI in the same class using a different type of tier two interventions.

3. This study should include effects of RTI in other four-year-old Kindergarten programs outside of the public school setting.

4. This study should include effects of RTI in full day four-year-old Kindergarten programs.

5. This study should include a follow-up to see how much these students retained after the DRA2 assessment at the beginning of Kindergarten.

6. This study should include a follow-up to see how many, if any students will be retained in Kindergarten.

7. There is a need for this study to be conducted in other at-risk areas all over the United States.

8. There is a need to conduct research on the effects of RTI to improve student achievement with special populations that are considered at-risk like the Smart Start preschool programs that serve pre-school age students with disabilities.

9. There needs to be another formal assessment piece that goes beyond the testing window set by the state. Many students met their growth targets after the researcher continued RTI even though it was after the official testing window.

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APPENDIX A

pals™ Phonological Awareness Literacy Screening

Fall/Spring Child Summary Sheet

Child's Name (First & Last) _____

Fall Assessment Date: _____ Spring Assessment Date: _____

▶ **Section I: Name Writing** (Use pages 5 and 6)

▶ **Section II: Alphabet Knowledge**
Part A: Upper-Case Alphabet Recognition

Fall

M	G	S	I
B	X	L	Q
H	W	T	R
J	C	O	V
P	F	D	U
A	Y	N	Z
K	E		

Spring

M	G	S	I
B	X	L	Q
H	W	T	R
J	C	O	V
P	F	D	U
A	Y	N	Z
K	E		

Upper-Case Score: _____ (26 possible)

General Observations and Comments

Upper-Case Score: _____ (26 possible)

Part B: Lower-Case Alphabet Recognition *(administer only if 16 or more correct on Upper-Case Alphabet Recognition)*

Fall

s	g	m	i
b	r	l	f
h	w	t	q
j	c	o	v
p	x	d	u
a	y	n	z
k	e		

Spring

s	g	m	i
b	r	l	f
h	w	t	q
j	c	o	v
p	x	d	u
a	y	n	z
k	e		

Lower-Case Score: _____ (26 possible)

General Observations and Comments

Lower-Case Score: _____ (26 possible)

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1

APPENDIX B

. B: Letter Sounds *(administer only if 9 or more correct on Lower-Case Alphabet Recognition)*

Fall

B	S	R	F	W
T	O	J	A	H
K	Sh	V	I	P
Z	L	C	Th	U
E	D	Y	G	N
Ch				

Spring

B	S	R	F	W
T	O	J	A	H
K	Sh	V	I	P
Z	L	C	Th	U
E	D	Y	G	N
Ch				

Letter Sounds Score: _____ (26 possible)

Letter Sounds Score: _____ (26 possible)

General Observations and Comments

Section III: Beginning Sound Awareness

Fall

Beginning Sound:	/M/	/S/	/B/
Practice Items:	man	sock	bag
		sink	

1. _____ milk   6. _____ sick

2. _____ ball   7. _____ meat

3. _____ six   8. _____ bear

4. _____ bird   9. _____ mop

5. _____ map   10. _____ sad

Spring

Beginning Sound:	/M/	/S/	/B/
Practice Items:	man	sock	bag
		sink	

1. _____ milk   6. _____ sick

2. _____ ball   7. _____ meat

3. _____ six   8. _____ bear

4. _____ bird   9. _____ mop

5. _____ map   10. _____ sad

Beginning Sound Score: _____ (10 possible)

Beginning Sound Score: _____ (10 possible)

General Observations and Comments

2

APPENDIX C

Letter/Sound Assessment

Uppercase

P	V	F	T	K	B
C	O	U	H	Y	M
G	S	X	A	Q	I
W	D	N	Z	R	E
L	J				

Lowercase

p	v	f	t	k	b
c	o	u	h	y	m
g	s	x	a	q	i
w	d	n	z	r	e
l	j				

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APPENDIX D

Name _____

Letter/Sound
Assessment

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Uppercase						
Date						
P						
V						
F						
T						
K						
B						
C						
O						
U						
H						
Y						
M						
G						
S						
X						
A						
Q						
I						
W						
D						
N						
Z						
R						
E						
L						
J						
Total						

Lowercase						
Date						
p						
v						
f						
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Total						

Sounds						
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